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**DEPARTMENT OF  
TRANSPORTATION**
**Research and Special Programs Administration****49 CFR Part 195****[Docket No. RSPA-97-2362; Amdt. 195-62]****RIN 2137--AD05****Pipeline Safety: Incorporation by Reference of Industry Standard on Leak Detection****AGENCY: Research and Special Programs Administration (RSPA).****ACTION:** Final rule.

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**SUMMARY:** This rule adopts as a referenced document an industry publication for pipeline leak detection, API 1130, "Computational Pipeline Monitoring," published by the American Petroleum Institute (API). This rule requires that an operator of a hazardous liquid pipeline use API 1130 in conjunction with other information, in designing, evaluating, operating, maintaining, and testing its software-based leak detection system. The use of this document will significantly advance the acceptance of leak detection technology on hazardous liquid pipelines. However, this rule does not require operators to install such systems.

**DATES:** This final rule takes effect July 6, 1999.

**FOR FURTHER INFORMATION**

**CONTACT:** Lloyd W. Ulrich, telephone: (202) 366-4556, FAX: (202) 366-4566, e-mail: lloyd.ulrich@rspa.dot.gov regarding the subject matter of this final rule, or Dockets Unit, (202) 366-4453, for copies of this final rule or other material in the docket. Further information can be obtained by accessing OPS' Internet Home Page at: ops.dot.gov.

**SUPPLEMENTARY  
INFORMATION:****I. Background on Requiring Leak Detection Equipment***A. Congressional Mandate To Issue Regulations*

Congress, in section 212 of the Pipeline Safety Act of 1992 (codified at 49 U.S.C. 60102(j)), required the Secretary of Transportation, by October 24, 1994, to survey and assess the effectiveness of emergency flow restricting devices (EFRDs) and other procedures, systems, and equipment used to detect and locate hazardous liquid pipeline ruptures and minimize product releases from hazardous liquid pipeline facilities. Congress further mandated that the Secretary issue regulations two years after completing the survey and assessment (no later than October 24, 1996). These regulations would prescribe the circumstances under which hazardous liquid pipeline operators would use EFRDs or other procedures, systems, and equipment used to detect and locate pipeline ruptures and minimize product releases from pipeline facilities. The Secretary delegated this authority to the Research and Special Programs Administration (RSPA).

*B. Advance Notice of Proposed Rulemaking, Volpe Center Report and Public Workshop*

RSPA used several means to gather information on EFRDs and leak detection equipment. We issued an advance notice of proposed rulemaking (ANPRM) (59 FR 2802, Jan. 19, 1994) to solicit information primarily from hazardous liquid pipeline operators about operational data and costs related to EFRDs and about the performance of leak detection systems to detect and locate hazardous liquid pipeline ruptures and minimize product release. The ANPRM also sought information to help determine which critical pipeline locations should be protected from product releases. Commenters provided limited usable data and generally opposed requiring leak detection equipment and EFRDs.

We contracted with the Volpe National Transportation Systems Center (Volpe Center) to conduct a research study on SCADA<sup>1</sup> systems, including

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<sup>1</sup> SCADA is an acronym for Supervisory Control and Data Acquisition. SCADA systems utilize computer technology to continuously gather data (e.g., pressure, temperature, and delivery flow rates) from remote locations on the pipeline. Dispatchers use SCADA systems to assist in day-to-day operating decisions on the pipeline. SCADA systems can also provide input for real-time models of the pipeline operation. Such models compare current operating conditions with

leak detection systems. Its report, "Remote Control Spill Reduction Technology: A Survey and Analysis of Applications for Liquid Pipeline Systems" (September 29, 1996), found that because of the pipeline industry's diversity, each system used for leak detection must be custom configured for a particular pipeline system, that SCADA and leak detection systems were dependent on the sophistication of the host computer and how rapidly and diverse remote field data can be collected, and that operators have invested in SCADA systems, but have invested much less in software-based leak detection systems.

RSPA also held a public workshop on October 19, 1995, to obtain more data on EFRDs and leak detection systems. Participants confirmed the Volpe Center report's finding that each leak detection system is unique to the pipeline on which it is installed. Discussions included operational and economic problems with leak detection systems, as well as their operational, economic and environmental benefits.

Detailed discussion of the ANPRM, Volpe Center report, and workshop can be found at 62 FR 56141; October 29, 1997.

*C. Development of API 1130*

In 1994, the API formed a task force to develop a document on computational pipeline monitoring (CPM). The task force produced API 1130, entitled "Computational Pipeline Monitoring," which addressed the use of software-based leak detection equipment. API 1130 defines computational pipeline monitoring as "an algorithmic monitoring tool that allows the pipeline controller to respond to a pipeline operating anomaly which may be indicative of a commodity release." The document's stated purpose is to assist the pipeline operator in selecting, implementing, testing, and operating a CPM system, and to help to identify the complexities, limitations, and other implications of detecting anomalies on liquid pipelines using CPM systems.

RSPA and the Volpe Center staff monitored the task force's work. Minutes of the task force meetings, and copies of

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calculated data values. A deviation may indicate the possibility of a leak.

final drafts of API 1130, are available in Docket No. PS-133.

#### *D. Definition of Areas Unusually Sensitive to Environmental Damage*

Congress required that in prescribing standards, RSPA identify the circumstances where EFRDs and other equipment must be installed. RSPA's current policy is to base regulations on risk assessment. We believe that a primary high risk circumstance would be where a pipeline is located in an environmentally sensitive area.

RSPA has been conducting public workshops since 1995 to identify a subset of environmentally sensitive areas, areas unusually sensitive to environmental damage, or USAs. Because of this ongoing regulatory effort to define USAs and the definition's relevance to locating EFRDs, RSPA has decided to wait before proposing a rule prescribing where leak detection systems would be required.

#### *E. First Step*

Although RSPA has delayed proposing the circumstances where EFRDs and other equipment must be installed on hazardous liquid pipeline systems until it has an USA definition, RSPA did not want to delay addressing the safety and environmental advantages of using software-based leak detection technology to reduce releases from pipeline ruptures.

Pipeline safety regulations do not require hazardous liquid pipeline operators to meet any leak detection system performance standards. Thus, as a first step in RSPA's statutory requirement to issue regulations prescribing where hazardous liquid pipeline operators would use EFRDs or other leak detection systems, RSPA considered adopting API 1130. RSPA would adopt API 1130 and require operators to use it in operating, maintaining, and testing their existing software-based leak detection systems and in designing and installing new software-based leak detection systems or replacing components of existing systems. RSPA considered this action because--

(1) We monitored the development of API 1130 and its development is well documented in Docket No. PS-133. The API task force members who developed API 1130 are experts in the pipeline in-

dustry, well versed in leak detection systems.

(2) API 1130 is a comprehensive document that advances safety by providing for more rapid detection of ruptures and response to those ruptures, limiting releases of hazardous liquids.

(3) Adopting API 1130 complies with the spirit of the President's initiative to reduce and simplify regulations by adopting industry-developed standards. Its adoption would not be controversial because the pipeline industry, the primary user, developed the publication.

#### *F. Role of the Technical Hazardous Liquid Pipeline Safety Standards Committee (THLPSSC)*

We proposed adopting API 1130 as a referenced document in the pipeline safety regulations to the THLPSSC at its meeting on November 6, 1996. The THLPSSC is a 15-member Congressionally mandated advisory committee (49 U.S.C. 60115) responsible for reviewing proposed pipeline safety standards for technical feasibility, reasonableness, and practicability. The THLPSSC Chairperson appointed a three-person subcommittee to work with RSPA to provide technical expertise on the feasibility of adopting API 1130. The subcommittee submitted to the THLPSSC Chairperson several recommendations, which THLPSSC accepted:

(1) API 1130 in its entirety should be referenced in the 49 CFR Part 195 regulations.

(2) The operations, maintenance, and testing portions of API 1130 should apply to all existing and newly-installed CPM systems, and API 1130 in its entirety should apply to all newly installed CPM systems and replacement sections of existing CPM systems.

(3) Compliance with API 1130 should be within twelve months of incorporation of the document into the regulations.

(4) The document should apply only to single phase liquid pipelines (see Section 1.3 of API 1130, which limits the document's application to single phase liquid pipelines).

(5) The preamble to the draft and final rule should state that referencing API 1130 is a first step in meeting the requirements of 49 U.S.C. 60102(j), and is not intended to delay issuing additional requirements or actions.

## **II. Notice of Proposed Rulemaking (NPRM)**

### *A. Proposal*

RSPA published an NPRM on October 29, 1997 (62 FR 56141) proposing to incorporate API 1130 into the regulations as a referenced document. The NPRM incorporated THLPSSC's recommendations. The rule proposed requiring an operator of a hazardous liquid pipeline to comply with API 1130 in designing, operating, maintaining, and testing the operator's software-based leak detection system. The proposed rule did not require an operator to install a software-based leak detection system, but proposed that whenever such a leak detection system is installed or a component replaced, API 1130 would have to be followed. Similarly, each existing software-based leak detection system would have to comply with the operating, maintenance, testing, and training provisions of API 1130.

To be consistent with API 1130's scope limitations (Section 1.3), the NPRM limited API 1130's applicability to single-phase liquid pipelines. Pipelines transporting both gas and liquid simultaneously, called dual phase pipelines, are prevalent in offshore operations. A pipeline transports gas and liquid to onshore facilities, where it is more economical to separate the gas and liquid for further transport. Designing a leak detection system for such a pipeline is extremely complex because of the different physical and chemical characteristics of gases and liquids.

The NPRM's comment period closed on December 29, 1997.

### *B. Discussion of the Comments*

Three comments were filed in the docket: two from hazardous liquid operators and one from API.

One operator asked three questions. The first dealt with a "Special Note" in API 1130 that API documents are reviewed, revised, reaffirmed, or withdrawn at least every five years. The commenter asked how incorporating API 1130 would affect the hazardous liquid pipeline safety regulations should API not reaffirm the document, and the document was no longer available. We review and revise the regulations periodically to update the references to industry and other voluntary standards. In this rule, we are incorporating the current version of API 1130.

An operator will have to comply with this version of the document until we revise the rule. Whatever API does with API 1130 in the future will not affect an operator's compliance with the version we are incorporating.

The second question concerned the use of CPM systems not described in section 4.1.2 of API 1130. Section 4.1.2 describes seven CPM systems: line balance, volume balance, modified volume balance, real time transient mode, pressure/flow monitoring, acoustic/negative pressure wave, and statistical analysis. The commenter asked if CPM systems not described could be used.

API 1130 lists and describes the seven CPM systems that are used by the pipeline industry today. Section 4.1.2 does not limit the use of CPM systems to only those described. Our intent in referencing API 1130 is to include any CPM system, whether or not described in the document, as long as the system meets the requirements of API 1130.

The third question concerned how we would enforce compliance with API 1130. Enforcement strategies are not included in the safety standards, but rather are developed by the RSPA enforcement staff. Each operator who has installed a CPM system will have to demonstrate that it is complying with the requirements in API 1130, as it does with any pipeline safety regulation.

The second operator suggested that the effective date for complying with API 1130 should be 24 months instead of the proposed 12 months. RSPA believes that 12 months is sufficient compliance time for at least three reasons. First, the operator is not required to install a CPM system, just to follow API 1130 if one is installed. Second, our conversations with API indicate that the vast majority of operators who use CPM systems have already adopted the practices embodied in the document. Third, a 12-month compliance timetable follows THLPSSC's recommendation.

API commented on the proposed rule's reference to the CPM selection criteria in section 4.2. API stated that the NPRM can be interpreted as requiring compliance with all the listed criteria in Section 4.2. However, the introduction to Section 4.2 makes clear that no system meets all the criteria. RSPA has revised §195.134 in the final rule to clarify that all of the selection criteria do not have to be met.

In addition, we have revised the definition for Computation Pipeline Monitoring to clarify that a CPM system alerts the pipeline dispatcher of a possible operating anomaly rather than allows the dispatcher to respond to an operating anomaly. This revision better describes the function of the monitoring tool. Also, §195.134 has been revised by eliminating the superfluous term "that will be installed" referring to new CPM systems.

### C. Advisory Committee Review

As mentioned previously, the THLPSSC accepted the subcommittee's recommendation to reference API 1130 in 49 CFR part 195. The NPRM was discussed at the THLPSSC meeting in Houston, Texas, on November 18, 1997. The eight members present voted unanimously to adopt API 1130 as proposed in the NPRM.

## III. Regulatory Analyses and Notices

### A. Executive Order 12866 and DOT Regulatory Policies and Procedures

This rule is not considered a significant action under section 3(f) of Executive Order 12866 and, therefore, was not reviewed by OMB. It is not considered significant under the Department of Transportation Policies and Procedures (44 FR 11034, Feb. 26, 1979).

As THLPSSC recommended, this rule adopts an industry document, API 1130. Our adopting API 1130 should result in leak detection systems that allow for faster leak detection, resulting in reduced commodity loss, lower short-term cleanup costs from releases, and lower long-term remediation costs. The rule does not require an operator to install a CPM if the operator does not already have one. It only requires that an operator with such a system follow API 1130. API 1130 represents good industry practices. Our conversations with API officials confirm that the vast majority of the industry that uses CPM already has adopted these practices.

In the NPRM, RSPA solicited information on any costs to industry of referencing API 1130. No one submitted any information on costs in response to this request. Therefore, RSPA believes that the cost of this regulation will be minimal and that a regulatory evaluation is not necessary.

### B. Regulatory Flexibility Act

The rule does not mandate the use of CPM but simply adopts the practices already instituted and developed by industry. Most operators, large, medium and small, with such systems already comply with these requirements and will not incur additional costs. Therefore, based on the facts available, I certify pursuant to Section 605 of the Regulatory Flexibility Act (5 U.S.C. 605) that this action will not have a significant economic impact on a substantial number of small entities.

### C. Federalism Assessment

The rulemaking action would not have substantial direct effects on states, on the relationship between the Federal Government and the states, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612 (52 FR 41685, Oct. 30, 1987), RSPA has determined that this rule does not have sufficient federalism implications to warrant preparation of a Federalism Assessment.

### D. Unfunded Mandates

This rule does not impose unfunded mandates under the Unfunded Mandates Reform Act of 1995. It does not result in costs of \$100 million or more to either State, local, or tribal governments, in the aggregate, or to the private sector, and is the least burdensome alternative that achieves the objective of the rule.

### E. Paperwork Reduction Act

There are minimal record keeping requirements included in API 1130. This rule does not require an operator to have a CPM. The industry developed API 1130; the vast majority of the industry that uses CPM already has adopted the practices in API 1130. Because the record keeping requirements represent the usual and customary practices of the industry, there is minimal paperwork burden on the public. Nevertheless, RSPA has prepared a paperwork analysis and, on April 1, 1998 submitted it to the Office of Management and Budget (OMB) for review. The estimated annual information collection burden for the entire industry is estimated to be only 100 hours per year.

Comments on the paperwork burden have been solicited on: (a) The need for

the proposed collection of information for the proper performance of the functions of the agency, including whether the information will have practical utility; (b) the accuracy of the agency's estimate of the burden of the proposed collection of information including the validity of the methodology and assumptions used; (c) ways to enhance the quality utility and clarity of the information to be collected; and (d) ways to minimize the burden of collection of information on those who respond, including the use of appropriate automated, electronic, mechanical, or other technological collection techniques.

No comments were submitted in response to the request for comment. OMB approved the information collection and assigned the information collection control number 2137-0598, which is approved through April 30, 2001. Federal agencies are required to publish the OMB control number for information collections in the Federal Register. Failure to publish the information collection control number would mean that respondents would not be required to respond to the information collection.

#### List of Subjects in 49 CFR Part 195

Ammonia, Carbon dioxide, Petroleum, Pipeline safety, Reporting and recordkeeping requirements.

In consideration of the foregoing, RSPA amends 49 CFR part 195 as follows:

#### PART 195--TRANSPORTATION OF HAZARDOUS LIQUIDS BY PIPELINE

1. The authority citation for Part 195 continues to read as follows:

**Authority:** 49 U.S.C. 5103, 60102, 60104, 60108, 60109, 60118; and 49 CFR 1.53.

#### Subpart A--General

2. Section 195.2 is amended by adding the definition for Computational Pipeline Monitoring to read as follows:

##### §195.2 Definitions.

\* \* \* \* \*

Computation Pipeline Monitoring (CPM) means a software-based monitoring tool that alerts the pipeline dispatcher

of a possible pipeline operating anomaly that may be indicative of a commodity release.

\* \* \* \* \*

3. Section 195.3 is amended by redesignating paragraphs (c)(2)(i) through (c)(2)(iii), as paragraphs (c)(2)(ii) through (c)(2)(iv), and adding a new paragraph (c)(2)(i) to read as follows:

##### §195.3 Matter incorporated by reference.

\* \* \* \* \*

(c) \* \* \*

(2) \* \* \*

(i) API 1130 "Computational Pipeline Monitoring" (1st Edition, 1995).

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#### Subpart C--Design Requirements

4. Section 195.134 is added to read as follows:

##### §195.134 CPM leak detection.

This section applies to each hazardous liquid pipeline transporting liquid in single phase (without gas in the liquid). On such systems, each new computational pipeline monitoring (CPM) leak detection system and each replaced component of an existing CPM system must comply with section 4.2 of API 1130 in its design and with any other design criteria addressed in API 1130 for components of the CPM leak detection system.

#### Subpart F--Operation and Maintenance

5. Section 195.444 is added to read as follows:

##### §195.444 CPM leak detection.

Each computational pipeline monitoring (CPM) leak detection system installed on a hazardous liquid pipeline transporting liquid in single phase (without gas in the liquid) must comply with API 1130 in operating, maintaining, testing, record keeping, and dispatcher training of the system.

Issued in Washington, DC on June 29, 1998.

**Kelley S. Coyner,**  
*Deputy Administrator.*

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